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APPARATUS AND METHOD FOR IDENTIFYING DATA
PACKET AT WIRE RATE ON A NETWORK
SWITCH PORT

ABSTRACT OF THE DISCLOSURE

A network switch, configured for performing layer 2 and layer 3 switching in an Ethernet (IEEE 802.3) network without blocking of incoming data packets, includes a network switch port having a filter (i.e., a packet classifier module) configured for evaluating an incoming data packet on an instantaneous basis, immediately upon receipt at the network switch port. The filter performs

5   simultaneous comparisons between the incoming data stream of the data packet and multiple templates configured for identifying respective data protocols. Each template is composed of a plurality of min terms, wherein each min term specifies a prescribed comparison operation within a selected data byte of the incoming data packet. The templates may be programmed by a user and stored in an internal min term memory. Moreover, the multiple simultaneous comparisons enable the

10   network switch to perform layer 3 switching for 100 Mbps and gigabit networks without blocking in the network switch.